Metals and Non-Metal

Metals: Metals are the elements which form positive ions by losing electrons or donating electrons. Metals are known as electropositive elements because they can form positive ions by losing electrons.

Ex: Iron, Aluminium, Copper, Silver, Gold, Platinum, Zinc, Tin, Lead, Mercury, Sodium etc.

Non-Metals: Non-Metals are the elements which form negative ions by gaining electrons or accepting electrons. Non-Metals are known as electronegative elements because they can form negative ions by gaining electrons.

Ex: Hydrogen, Nitrogen, Chlorine, Bromine, Carbon, Diamond and graphite etc.

Physical properties of Metal:

(i) Metals occur in the solid state. All metals are solid except with an exception for mercury which is in liquid state in its natural form.

(ii) Metals are malleable. Gold and Silver are the best malleable metals.
Malleability: The property which allows the metals to be hammered into thin sheets is called malleability.

(iii) Metals are ductile. Gold and Silver are the most ductile metals. Copper and aluminium metals are also very ductile and can be drawn into thin copper wire and aluminium wires.

Ductility: The property which allows the metals to be drawn into thin wires is called ductility.

(iv) Metals are good conductors of heat. Silver metal is the best conductor of heat.

(v) Metals are good conductors of electricity. Silver metal is the best conductor of electricity. The electric wires are made of copper and aluminium metals because they are very good conductor of electricity.

(vi) Metals are lustrous. Gold, silver and copper are best lustrous metal.

Metallic luster: The property of a metal of shining surface is called metallic luster.

(vii) Metals are generally hard except sodium and potassium are soft metals which can be easily cut with knife.

(viii) Metals are strong except sodium and potassium metals which are not strong.

(ix) Metals are high melting points and boiling points except sodium and potassium metals which have low melting and boiling points.

Melting point of iron is 1535℃.

(x) Metals have high densities except sodium and potassium metals which have low densities

(xi) Metals are sonorous.

Sonority or Sonorousness: The property of metals of being sonorous is called sonority.

Physical property of non-metals:

(i) Non metals are neither malleable nor ductile.

(ii) Non-metals do not conduct heat and electricity.

(iii) Non-metals are not lustrous except Iodine is a non metal having lustrous appearance.

(iv) Non-metals are generally soft except diamond which is hard.

(v) Non-metals are not strong.

(vi) Non-metals have low melting points and boiling points except diamond which is non-metal having high melting and boiling point.

(vii) Non-metals are non-sonorous.